

Exhibit 2

SUPPLEMENTAL EXPERT WITNESS REPORT

of

JACOB L. VIGDOR, PH.D.

May 28, 2021

This supplemental report addresses three substantive points raised in the supplemental expert witness report of Michael Scuello, dated April 16, 2021. Mr. Scuello's points can be summarized as follows:

1. That in my own report I "used the wrong column when comparing offers made to Asian students in 2020 to offers that would have been made using alternative admissions algorithms" (p.1).
2. "[B]etween 2018 ... and 2020 ... the percentage of seats offered to Asian students at the Specialized High Schools *increased both overall and at each of the eight Specialized High Schools.*" (p.1, emphasis in original)
3. "The analyses [Mr. Scuello] conducted do not support these claims that [listing Stuyvesant as a first choice or listing fewer school choices] reduced Asian student's [*sic*] chances of obtaining a seat." (p.4)

My responses can be summarized as follows:

1. There is no objective sense in which it is "wrong" to analyze invitations to the Discovery program, which are issued at the sole discretion of the New York City Department of Education, rather than an alternative contaminated by a process beyond DOE's control: whether families completed the paperwork necessary to accept that invitation.
2. None of Mr. Scuello's evidence contradicts my finding that simulations reveal specific, identifiable students in the 2020 admissions cycle who would have been offered a seat at Stuyvesant or Bronx Science had the 2018 admissions algorithm been used instead of the 2020 algorithm, and that this set of students was disproportionately Asian. Mr. Scuello does note that some of the students who received "invitations" in their stead did not convert them into "offers," but this information is relevant only under the theory that the harm caused to a student by denying them admission is negated when the alternate student invited in their stead declines the invitation.
3. None of Mr. Scuello's evidence is capable of affirming or refuting my finding that failure to list Stuyvesant as a top choice, as well as listing a smaller number of schools, reduces the chances of admission.

Discovery "invitations" versus Discovery "offers"

Students are responsible for taking the SHSAT exam and listing their preferred specialized high schools. Once these materials are delivered to the Department of Education, it is at DOE's sole

discretion to admit students to individual high schools or “invite” them to the Discovery program. Discovery invitations are a pure function of Department of Education policy. My report focused on specific decisions by the Department of Education to expand the Discovery program and restrict eligibility to high-ENI schools between the 2018 and 2020 admission cycles. The simulations I conducted address the question “which students would have been admitted had the Department of Education not changed its policy.” I can answer this question with confidence because both the pre-expansion and post-expansion policies are straightforward algorithms that I have the capacity to replicate.

As Mr. Scuello notes in his supplemental report, once a Discovery “invitation” is issued, the process by which that invitation is converted to an “offer” is largely out of the Department of Education’s control. Mr. Scuello emphasizes the need for families to document their disadvantaged status but also notes that a family must also submit an application (pp.1–2). To simulate the outcome of the process leading to an “offer” rather than an “invitation” would require me to replicate not only the straightforward algorithms that the New York City Department of Education has used to determine “invitations” but the more complicated individual family decisions that determine whether students submit the paperwork necessary to convert their “invitation” into an “offer.” Neither I nor any analyst can hope to model these very personal and disparate family-level processes with anything near the certainty I can apply to the Department of Education’s process. Mr. Scuello himself makes no effort to do so, instead relying on a cross-cohort analysis representing a fundamentally different methodology from mine.

The evidence Mr. Scuello presents in his Tables 1 and 2 suggests that Asian students invited to participate in the Discovery program are more likely to successfully clear the hurdles the New York City Department of Education imposes on them and convert their “invitations” to “offers.” This is the only possible explanation for why restricting attention to those with “offers” would raise the representation of Asian students. I have been able to independently confirm this using specialized high school admissions data. Asian students converted their “invitations” into “offers” at rates substantially higher than students in all other groups except Native Americans, who comprise a very small proportion of the applicant pool.

Table 1: Percent of students with Discovery program “invitations” who successfully convert them into “offers,” by race, 2020 admissions cycle.

Asian	72.1%
Black	54.6%
Hispanic	60.0%
Multi-Racial	40.0%
Native American	77.8%
Unknown	33.3%
White	28.9%

Mr. Scuello’s argument that offers are “right” and invitations are “wrong” espouses the view, intentionally or not, that any harm to Asian students caused by the direct actions of the New

York City Department of Education – specifically, their decision to deny a student admission to a specialized high school – is capable of being undone by actions of third parties, specifically the failure of students in other racial groups to successfully convert their “invitations” into “offers.”

The evidence presented in my report demonstrates that there are specific, identifiable students in the 2020 admissions cohort who would have been admitted to Stuyvesant High School and Bronx Science had the 2018 admissions algorithm been used. These students were disproportionately Asian. Mr. Scuello’s evidence is relevant only under the argument that the harm of being denied admission is negated if the person offered a seat instead of you declines to take it.

Across-cohort comparisons can neither affirm nor refute single-cohort simulations

In each of his six tables, Mr. Scuello offers a comparison of the cohorts who applied for admission in 2018, 2019, and 2020. It is possible that the contrasts shown in those exhibits reveal the impact of changing New York City Department of Education policy, but they could also reflect shifting demographic composition or other elements beyond DOE’s direct control.

In my report, I did not utilize across-cohort comparisons to infer the impact of changing admissions algorithms because these comparisons do not isolate the impact of policy. I instead used a single admissions cohort and imputed what the admissions decisions would have been under alternate algorithms. With this method it is possible to pinpoint specific students who would be admitted under one algorithm but not another.

Because Mr. Scuello did not utilize the same single-cohort methodology in his supplemental report, none of the evidence presented therein is capable of refuting my findings.

Scuello’s Tables 4, 5, and 6 can neither affirm nor refute my original report

To conclude his supplemental report, Mr. Scuello takes issue with the claims in my report that failing to list Stuyvesant as a first choice, or listing fewer choices, reduces a student’s chances of admission. These claims are based on a multivariate statistical model, a copy of which was provided to Mr. Scuello along with the programming code required to replicate it.

It is important to emphasize that my original analysis was based on the statistical technique of multiple regression, meaning that I analyzed the impact of listing fewer schools, listing Stuyvesant first, and SHSAT scores not one-by-one, as Mr. Scuello does, but simultaneously. Thus, when I speak of the impact of listing Stuyvesant first in my report, it is the impact of listing Stuyvesant first *ceteris paribus*: holding the number of schools on the list and SHSAT scores constant. When I speak of the impact of listing fewer schools, it is the impact of listing fewer schools *ceteris paribus*. Mr. Scuello’s analysis considers only one factor at a time, and as such it is fundamentally incomparable to my multivariate analysis.

Even considering the univariate analogues to my conclusions, however, Mr. Scuello fails to present contradictory evidence.

The univariate assertion that failing to list Stuyvesant first reduces the chance of admission, holding nothing else constant, can be expressed mathematically as follows:

$$\frac{\text{Admitted Students Listing Stuyvesant First}}{\text{Students Listing Stuyvesant First}} > \frac{\text{Admitted Students Listing Other Schools First}}{\text{Students Listing Other Schools First}}$$

That is, the proportion of admitted students to all students is higher among those students who list Stuyvesant first relative to students who list other schools first. To refute this assertion, one would need to demonstrate the opposite; namely that students who list other schools first have the same or greater chance of admission.

Mr. Scuello's Table 4 shows the following ratio:

$$\frac{\text{Admitted Asian Students Listing Other Schools First}}{\text{Admitted Asian Students}}$$

using two different definitions of what "admitted" means (Discovery "offers" or "invitations" alongside SHSAT admissions) and for three different admissions cohorts. It is impossible to affirm or refute the inequality listed above on the basis of this information. In order to do that, Mr. Scuello would have had to incorporate information on students who were not admitted.

Similarly, the univariate assertion that listing fewer schools reduces the chance of admission, holding nothing else constant, can be expressed as follows:

$$\frac{\text{Admitted Students Listing 8 Schools}}{\text{Students Listing 8 Schools}} > \frac{\text{Admitted Students Listing 7 Schools}}{\text{Students Listing 7 Schools}} \dots$$

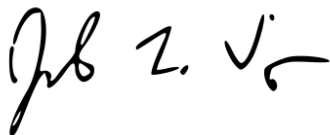
continuing the string of inequalities down to the ratio of admitted students listing one school to students listing one school. In Tables 5 and 6, Mr. Scuello shows the following ratios:

$$\frac{\text{Admitted Asian Students listing 8 schools}}{\text{Admitted Asian Students}}$$

using two definitions of "admitted," for three cohorts, and replacing the number "8" with "7" and the other integers on down to "1." It is impossible to affirm or refute the original assertion on the basis of this information. In order to do that, Mr. Scuello would have had to incorporate information on students who were not admitted.

Mr. Scuello thus fails to present any evidence capable of refuting my claims.

Signed,

A handwritten signature in black ink, appearing to read "J. Z. V." with a stylized flourish at the end.